

SEQUENCE LISTING

<110>	Raymond J. Dattwyler Gerald Seinost Daniel Dykhuizen Benjamin J. Luft Maria J.C. Gomes-Solecki	
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gaa att Glu Ile															384
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Leu		35			Asp		40				_	45				
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Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu

245

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Ile Thr Asp	Ser Asn	Ala Val	Leu Leu	Ala Val	Lys Gl	u Val	Glu	Ala	144
35			40		4	5			
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50	501 110	55	110 1110	1110 270	60	0 0-1	-10	-10	
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Ile His Gln 65	Asn Asn	Gly Leu 70	Asp Thr	Glu Asn 75		s Asn	Gly	Ser 80	
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Leu Leu Ala	Gly Ala			Thr Lev			Lys		200
	85			90			95		
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nop ory neu	100	ord ory	105	Old Dye	110 110	110		270	
aaa tgt tct									384
Lys Cys Ser 115	Glu Thr	Phe Thr	Asn Lys 120	Leu Lys	Glu Ly 12		Thr	Asp	
	ass aat	att act		gat gos			att	tta	432
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Leu Leu Ser Ser 50	_		Ala Lys Ala		Lys
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Lys Cys Ser Glu		_	Leu Lys Glu		Asp
115 Leu Gly Lys Glu 130		120 Thr Asp Ala 135	Asp Ala Lys 140		Leu
Lys Ala Asn Gly	Thr Lys '	Thr Lys Gly		Leu Gly Lys	
145 Phe Glu Ser Val	150 . Glu Val :	Leu Ser Lys	155 Ala Ala Lys	Glu Met Leu	160 Ala
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aaa ata g Lys Ile A													288
tcg ttg t Ser Leu L													336
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gct aag a Ala Lys L 130													432
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Thr Leu Val Leu Ser Ile Asp Glu Leu Ala Lys Lys Ala Ile Gly Gln
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Leu Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys
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Ala Lys Lys Cys Ser Glu Glu Phe Thr Asn Lys Leu Lys Ser Gly His
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                                            140
Ala Asp Leu Gly Lys Gln Asp Ala Thr Asp Asp His Ala Lys Ala Ala
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Ile Ser Cys Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp
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									agt Ser							432
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Ser 65	Ser	Ile	Asp	Glu	Leu 70	Ser	Lys	Ala	Ile	Gly 75	Lys	Lys	Ile	Lys	Asn 80	
Asp				85					90					95		
Gly .			100					105					110			
Asn		115				_	120		_			125	_	_		
	130				-	135	_	_			140			_		
Gln 145					150				-	155					160	
Gly			_	165					170					175		
Leu			180		_			185					190		Val	
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gct Ala																96
att Ile																144
ttg Leu	ctg Leu 50	tca Ser	tct Ser	ata Ile	gat Asp	gaa Glu 55	att Ile	gct Ala	gct Ala	aaa Lys	gct Ala 60	att Ile	ggt Gly	aaa Lys	aaa Lys	192
ata Ile 65																240

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Lys Cys Ser Glu Thr Phe Thr Asn Lys Leu Lys Glu Lys His Thr Asp 120 ctt ggt aaa gaa ggt gtt act gat gct gat gca aaa gaa gcc att tta Leu Gly Lys Glu Cly Val Thr Asp Ala Asp Ala Lys Glu Ala Ile Leu 130 law				Lys					Lys					Ala			336
Leu Gly Lys Glu Gly Val Thr Asp Ala Asp Ala Lys Glu Ala Ile Leu 130 aaa aca aat ggt act aaa act aaa ggt gct gaa gaa ctt gga aaa tta 142 ttt gaa tca gta gag gtc ttg tca aaa gc gct aaa gag at gct gct gcl Asn Ser Val Lys Glu Leu Ser Lys Ala Ala Lys Glu Met Leu Ala 165 aat tca gtt aaa gag ctt aca agc cct gtt gtg gca gaa agt cca gcc Asn Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Ala 180 atg ggt agt aat tca ggg aaa ggt ggg gat tct gca tct act act act act act Met Gly Ser Asn Ser Gly Lys Gly Gly Asp Ser Ala Ser Thr Asn Pro 205 gct gac gag tct gcg aaa ggg cct aat ctt aca gaa ata agc aaa aaa Ala Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Lys 210 att aca gat tct aat gca ttt gta ctt gct gtt aaa aga gat gct gag act Asn Ser Asn Asn Asn Gly Leu Ala Ala Lys Lys Gly Ser Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly Ser 245 att gac aat aat aat aat ggt tta gca gaa att ca acc cta ata cac gaa aat tg gad act 11e Asp Asn			Ser					Asn					Lys				384
Lys Thr Asn Gly Thr Lys Thr Lys Gly Ala Glu Leu Gly Lys Leu 160 ttt gaa tca gta gag gtc ttg tca aaa gca gct aaa gag atg ctt gct Ala Lys Glu Met Leu Ala Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Val Lys Glu Leu Thr Ser Pro Val Val Ala Glu Ser Pro Ala 180 atg ggt agt aat tca ggg aaa ggg ggg ggg ggg ggg ggg gat tct gca aat cct act act act act act act ala Ser Gly Lys Gly Gly Asp Ser Ala Ser Thr Asn Pro 205 gct gac gag tct gcg aaa ggg cct aat ctt aca aca cct act act act act	Leu	Gly					Thr					Lys					432
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The Asp Asn Asn Asn Gly Leu Ala Ala Leu Asn Asn Gln Asn Gly Ser 260 265 270 ttg tta gca gga gcc tat gca ata tca acc cta ata aca gaa aaa ttg Leu Leu Ala Gly Ala Tyr Ala Ile Ser Thr Leu Ile Thr Glu Lys Leu 275 280 285 agt aaa ttg aaa aat tta gaa gaa tta aag aca gaa att gca aag gct Ser Lys Leu Lys Asn Leu Glu Glu Leu Lys Thr Glu Ile Ala Lys Ala					Ile					Lys					Gln		768
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cct Pro	aat Asn 210	ctt Leu	acc Thr	gta Val	ata Ile	agc Ser 215	aaa Lys	aaa Lys	att Ile	aca Thr	gat Asp 220	tct Ser	aat Asn	gca Ala	ttt Phe	672
tta Leu 225	ctg Leu	gct Ala	gtg Val	aaa Lys	gaa Glu 230	gtt Val	gag Glu	gct Ala	ttg Leu	ctt Leu 235	tca Ser	tct Ser	ata Ile	gat Asp	gaa Glu 240	720
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 Ser

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 Ser
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 Asn
 Leu
 Thr
 Glu
 Ile
 Ser
 Lys
 Lys
 Lys
 July
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cct Pro	gat Asp 210	gag Glu	tct Ser	gca Ala	aaa Lys	gga Gly 215	cct Pro	aat Asn	ctt Leu	acc Thr	gta Val 220	ata Ile	agc Ser	aaa Lys	aaa Lys	672
					gca Ala 230											720
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													gaa Glu 270			816
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gat Asp	ctt Leu 130	ggc Gly	aaa Lys	cag Gln	gat Asp	gct Ala 135	acc Thr	gat Asp	gat Asp	cat His	gca Ala 140	aaa Lys	gca Ala	gct Ala	att Ile	432
tta Leu 145	aaa Lys	aca Thr	cat His	gca Ala	act Thr 150	acc Thr	gat Asp	aaa Lys	ggt Gly	gct Ala 155	aaa Lys	gaa Glu	ttt Phe	aaa Lys	gat Asp 160	480
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								tca Ser								912
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gca Ala	gaa Glu	att Ile	gaa Glu	aag Lys 325	gct Ala	aag Lys	aaa Lys	tgt Cys	tct Ser 330	gaa Glu	gaa Glu	ttt Phe	act Thr	gct Ala 335	aaa Lys	1008
Leu	Lys	Ğİy	Glu 340	His	Thr	Asp	Leu	ggt Gly 345	Lys	Glu	Gly	Val	Thr 350	Asp	Asp	1056
Asn	Ala	Lys 355	Lys	Ala	Ile	Leu	Lys 360	aca Thr	Asn	Asn	Asp	Lys 365	Thr	Lys	Gly	1104
Ala	Asp 370	Glu	Leu	Glu	Lys	Leu 375	Phe	Glu	Ser	Val	Lys 380	Asn	Leu	Ser		1152
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	r Glu		100					105					110		
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_	s Glu 130	_		-		135	_	-			140				
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	a Asp			165					170					175	
	y Ala		180					185					190		
-	s Ala	195	_				200					205			
	o Val 210					215					220				
22					230					235					240
	u Thr			245					250					255	
	a Val	_	260					265					270		
_	s Ala	275	_	_	-		280					285			
	a Asp 290					295					300				
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	a Glu			325					330					335	
	u Lys		340					345					350		
	n Ala	355	_				360					365			
	a Asp 370					375					380				ьys
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aag Lys	gaa Glu	aaa Lys	att Ile	gaa Glu 325	aat Asn	gct Ala	aag Lys	aaa Lys	tgt Cys 330	tct Ser	gaa Glu	gat Asp	ttt Phe	act Thr 335	aaa Lys	1008
aaa Lys	cta Leu	gaa Glu	gga Gly 340	gaa Glu	cat His	gcg Ala	caa Gln	ctt Leu 345	gga Gly	att Ile	gaa Glu	aat Asn	gtt Val 350	act Thr	gat Asp	1056
gag Glu	aat Asn	gca Ala 355	aaa Lys	aaa Lys	gct Ala	att Ile	tta Leu 360	ata Ile	aca Thr	gat Asp	gca Ala	gct Ala 365	aaa Lys	gat Asp	aag Lys	1104
ggc Gly	gct Ala 370	gca Ala	gag Glu	ctt Leu	gaa Glu	aag Lys 375	cta Leu	ttt Phe	aaa Lys	gca Ala	gta Val 380	gaa Glu	aac Asn	ttg Leu	gca Ala	1152
aaa Lys 385	gca Ala	gct Ala	aaa Lys	gag Glu	atg Met 390	ctt Leu	gct Ala	aat Asn	tca Ser	gtt Val 395	aaa Lys	gag Glu	ctt Leu	ac		1196

<210> 62 <211> 398

<212> PRT <213> ospC Chimera

<400> 62 Met Arg Leu Ieu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp 90 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile 105 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu 120 Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn 135 Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp 150 155 Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys 170 Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser 185 Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser 200 Pro Val Val Ala Glu Ser Pro Ala Met Val Asn Asn Ser Gly Lys Asp 215 220 Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn 230 235 Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu 250 Ala Val Lys Glu Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala 265 Thr Lys Ala Ile Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val 280 Glu Ala Gly His Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser 295 300 Lys Leu Ile Thr Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu 310 315 Lys Glu Lys Ile Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp 340 345 Glu Asn Ala Lys Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys 360 Gly Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala 375 380 Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu 390

<210> 63 <211> 1185 <212> DNA <213> ospC Ch	imera				
<220> <221> CDS <222> (1)(1185)				
<400> 63 atg aga tta t Met Arg Leu L 1					
gca caa aaa g Ala Gln Lys G					
gat ggg aat a Asp Gly Asn T 35					
aat ctt aca g Asn Leu Thr G 50	aa ata agt lu Ile Ser	aaa aaa att Lys Lys Ile 55	acg gat tct Thr Asp Ser 60	aat gcg gtt Asn Ala Val	tta 192 Leu
ctt gct gtg a Leu Ala Val L 65	aa gag gtt ys Glu Val 70	gaa gcg ttg Glu Ala Leu	ctg tca tct Leu Ser Ser 75	ata gat gag Ile Asp Glu	ctt 240 Leu 80
gct aaa gct a Ala Lys Ala I	tt ggt aaa le Gly Lys 85	aaa ata aaa Lys Ile Lys	aac gat ggt Asn Asp Gly 90	agt tta gat Ser Leu Asp 95	aat 288 Asn
gaa gca aat c Glu Ala Asn A 1	gc aac gag rg Asn Glu 00	tca ttg tta Ser Leu Leu 105	gca gga gct Ala Gly Ala	tat aca ata Tyr Thr Ile 110	tca 336 Ser
acc tta ata a Thr Leu Ile T 115	ca caa aaa hr Gln Lys	tta agt aaa Leu Ser Lys 120	tta aac gga Leu Asn Gly	tca gaa ggt Ser Glu Gly 125	tta 384 Leu
aag gaa aag a Lys Glu Lys I 130	tt gcc gca le Ala Ala	gct aag aaa Ala Lys Lys 135	tgc tct gaa Cys Ser Glu 140	gag ttt agt Glu Phe Ser	act 432 Thr
aaa cta aaa g Lys Leu Lys A 145	at aat cat sp Asn His 150	gca cag ctt Ala Gln Leu	ggt ata cag Gly Ile Gln 155	ggc gtt act Gly Val Thr	gat 480 Asp 160
gaa aat gca a Glu Asn Ala L	aa aaa gct ys Lys Ala 165	att tta aaa Ile Leu Lys	gca aat gca Ala Asn Ala 170	gcg ggt aaa Ala Gly Lys 175	Asp

													gaa Glu 190			576
													gag Glu			624
													aat Asn			672
													aca Thr			720
													gtg Val			768
													gct Ala 270			816
													gat Asp			864
													ata Ile			912
													gaa Glu			960
aag Lys	gct Ala	aag Lys	aaa Lys	tgt Cys 325	tct Ser	gaa Glu	gaa Glu	ttt Phe	act Thr 330	gct Ala	aaa Lys	tta Leu	aaa Lys	ggt Gly 335	gaa Glu	1008
													gca Ala 350			1056
gcc Ala	att Ile	tta Leu 355	aaa Lys	aca Thr	aat Asn	aat Asn	gat Asp 360	aaa Lys	act Thr	aag Lys	ggc Gly	gct Ala 365	gat Asp	gaa Glu	ctt Leu	1104
gaa Glu	aag Lys 370	tta Leu	ttt Phe	gaa Glu	tca Ser	gta Val 375	aaa Lys	aac Asn	ttg Leu	tca Ser	aaa Lys 380	gca Ala	gct Ala	aaa Lys	gag Glu	1152
					gtt Val 390											1185

<210> 64

76/108

<211> 395 <212> PRT <213> ospC Chimera <400> 64 Met Arg Leu Ieu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn 90 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser 105 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu 120 Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr 135 Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp 150 155 Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp 170 Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu 185 Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr 200 Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser 215 220 Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile 230 235 Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu 250 Val Glu Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly 265 Lys Lys Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn 280 Gly Ser Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys 295 300 Lys Ile Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu 310 315 Lys Ala Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu 330 His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys 340 345 Ala Ile Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu 360 Glu Lys Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu 375 Met Leu Thr Asn Ser Val Lys Glu Leu Thr Ser 390

<210> 65 <211> 1184 <212> DNA <213> ospC Chimera	
<220> <221> CDS <222> (1)(1184)	
<400> 65 atg aga tta tta ata gga ttt gct tta gcg Met Arg Leu Leu Ile Gly Phe Ala Leu Ala 1 5 10	
gca caa aaa ggt gct gag tca att gga tcc Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser 20 25	
gat ggg aat aca tct gca aat tct gct gat Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp 35 40	
aat ctt aca gaa ata agt aaa aaa att acg Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr 50 55	
ctt gct gtg aaa gag gtt gaa gcg ttg ctg Leu Ala Val Lys Glu Val Glu Ala Leu Leu 65 70	tca tct ata gat gag ctt 240 Ser Ser Ile Asp Glu Leu 75 80
gct aaa gct att ggt aaa aaa ata aaa aac Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn 85 90	gat ggt agt tta gat aat 288 Asp Gly Ser Leu Asp Asn 95
gaa gca aat cgc aac gag tca ttg tta gca Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala 100 105	gga gct tat aca ata tca 336 Gly Ala Tyr Thr Ile Ser 110
acc tta ata aca caa aaa tta agt aaa tta Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu 115 120	
aag gaa aag att gcc gca gct aag aaa tgc Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys 130 135	tct gaa gag ttt agt act 432 Ser Glu Glu Phe Ser Thr 140
aaa cta aaa gat aat cat gca cag ctt ggt Lys Leu Lys Asp Asn His Ala Gln Leu Gly 145	
gaa aat gca aaa aaa gct att tta aaa gca Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala 165 170	

aag Lys	ggc Gly	gtt Val	gaa Glu 180	gaa Glu	ctt Leu	gaa Glu	aag Lys	ttg Leu 185	tcc Ser	gga Gly	tca Ser	tta Leu	gaa Glu 190	agc Ser	tta Leu	576
					gag Glu											624
agc Ser	cct Pro 210	gtt Val	gtc Val	cat His	ggt Gly	aat Asn 215	aat Asn	tca Ser	gga Gly	aaa Lys	gat Asp 220	ggg Gly	aat Asn	aca Thr	tct Ser	672
gca Ala 225	aat Asn	tct Ser	gct Ala	gat Asp	gag Glu 230	tct Ser	gtt Val	aaa Lys	ggg Gly	cct Pro 235	aat Asn	ctt Leu	aca Thr	gaa Glu	ata Ile 240	720
					gaa Glu											768
att Ile	gaa Glu	act Thr	ttg Leu 260	ctt Leu	gca Ala	tct Ser	ata Ile	gat Asp 265	gaa Glu	ctt Leu	gct Ala	act Thr	aaa Lys 270	gct Ala	att Ile	816
ggt Gly	aaa Lys	aaa Lys 275	ata Ile	caa Gln	caa Gln	aat Asn	ggt Gly 280	ggt Gly	tta Leu	gct Ala	gtc Val	gaa Glu 285	gcg Ala	ggg Gly	cat His	864
aat Asn	gga Gly 290	aca Thr	ttg Leu	tta Leu	gca Ala	ggt Gly 295	gct Ala	tat Tyr	aca Thr	ata Ile	tca Ser 300	aaa Lys	cta Leu	ata Ile	aca Thr	912
caa Gln 305	aaa Lys	tta Leu	gat Asp	gga Gly	ttg Leu 310	aaa Lys	aat Asn	tca Ser	gaa Glu	aaa Lys 315	tta Leu	aag Lys	gaa Glu	aaa Lys	att Ile 320	960
gaa Glu	aat Asn	gct Ala	aag Lys	aaa Lys 325	tgt Cys	tct Ser	gaa Glu	gat Asp	ttt Phe 330	act Thr	aaa Lys	aaa Lys	cta Leu	gaa Glu 335	gga Gly	1008
gaa Glu	cat His	gcg Ala	caa Gln 340	ctt Leu	gga Gly	att Ile	gaa Glu	aat Asn 345	gtt Val	act Thr	gat Asp	gag Glu	aat Asn 350	gca Ala	aaa Lys	1056
aaa Lys	gct Ala	att Ile 355	Leu	ata Ile	aca Thr	gat Asp	gca Ala 360	gct Ala	aaa Lys	gat Asp	aag Lys	ggc Gly 365	Ala	gca Ala	gag Glu	1104
ctt Leu	gaa Glu 370	aag Lys	cta Leu	ttt Phe	aaa Lys	gca Ala 375	gta Val	gaa Glu	aac Asn	ttg Leu	gca Ala 380	aaa Lys	gca Ala	gct Ala	aaa Lys	1152
	Met				tca Ser 390					ac						1184

<210> 66 <211> 394 <212> PRT <213> ospC Chimera <400> 66 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys 10 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys 20 25 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu 70 Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn 90 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser 100 105 110 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu 120 125 Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr 135 140 Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp 150 155 Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Gly Lys Asp 170 Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu 185 180 Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr 200 Ser Pro Val Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser 215 220 Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile 235 230 Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu 250 245 Ile Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile 260 265 Gly Lys Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His 275 280 Asn Gly Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr 300 295 Gln Lys Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile 310 315 Glu Asn Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly 325 330 Glu His Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys 345 340 Lys Ala Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu 365 360 Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys 380 375 Glu Met Leu Ala Asn Ser Val Lys Glu Leu 390

<210> 67 <211> 11 <212> DN <213> os	.84 IA	era											
<220> <221> CD <222> (1		84)											
<400> 67 atg aga Met Arg 1	tta tta												48
gca caa Ala Gln	aaa ggt Lys Gly 20	gct ga Ala Gl	g tca u Ser	att Ile	gga Gly 25	tcc Ser	tgt Cys	aat Asn	aat Asn	tca Ser 30	ggg Gly	aaa Lys	96
gat ggg Asp Gly	aat aca Asn Thr 35	tct go Ser Al	a aat a Asn	tct Ser 40	gct Ala	gat Asp	gag Glu	tct Ser	gtt Val 45	aaa Lys	ggg Gly	cct Pro	144
aat ctt Asn Leu 50	aca gaa Thr Glu	ata aq Ile Se	t aaa r Lys 55	aaa Lys	att Ile	acg Thr	gat Asp	tct Ser 60	aat Asn	gcg Ala	gtt Val	tta Leu	192
ctt gct Leu Ala 65	gtg aaa Val Lys	Glu Va	t gaa 1 Glu 10	gcg Ala	ttg Leu	ctg Leu	tca Ser 75	tct Ser	ata Ile	gat Asp	gag Glu	ctt Leu 80	240
gct aaa Ala Lys	gct att Ala Ile	ggt aa Gly Ly 85	a aaa s Lys	ata Ile	aaa Lys	aac Asn 90	gat Asp	ggt Gly	agt Ser	tta Leu	gat Asp 95	aat Asn	288
gaa gca Glu Ala	aat cgc Asn Arg 100	Asn G	ıg tca .u Ser	ttg Leu	tta Leu 105	gca Ala	gga Gly	gct Ala	tat Tyr	aca Thr 110	ata Ile	tca Ser	336
acc tta Thr Leu	ata aca Ile Thr 115	caa aa Gln L	a tta ⁄s Leu	agt Ser 120	aaa Lys	tta Leu	aac Asn	gga Gly	tca Ser 125	gaa Glu	ggt Gly	tta Leu	384
aag gaa Lys Glu 130	aag att Lys Ile	gcc g Ala A	a gct a Ala 135	Lys	aaa Lys	tgc Cys	tct Ser	gaa Glu 140	gag Glu	ttt Phe	agt Ser	act Thr	432
aaa cta Lys Leu 145	aaa gat Lys Asp	Asn H	at gca s Ala 50	cag Gln	ctt Leu	ggt Gly	ata Ile 155	cag Gln	ggc Gly	gtt Val	act Thr	gat Asp 160	480
gaa aat Glu Asn	gca aaa Ala Lys	aaa g Lys A 165	ct att la Ile	tta Leu	aaa Lys	gca Ala 170	aat Asn	gca Ala	gcg Ala	ggt Gly	aaa Lys 175	gat Asp	528

											tca Ser					576
											gtt Val					624
											gat Asp 220					672
											aat Asn					720
agt Ser	aaa Lys	aaa Lys	att Ile	aca Thr 245	gaa Glu	tct Ser	aac Asn	gca Ala	gtt Val 250	gtt Val	ctg Leu	gcc Ala	gtg Val	aaa Lys 255	gaa Glu	768
											gct Ala					816
ggt Gly	aag Lys	aaa Lys 275	ata Ile	ggc Gly	aat Asn	aat Asn	ggt Gly 280	tta Leu	gag Glu	gcc Ala	aat Asn	cag Gln 285	agt Ser	aaa Lys	aac Asn	864
aca Thr	tca Ser 290	ttg Leu	tta Leu	tca Ser	gga Gly	gct Ala 295	tat Tyr	gca Ala	ata Ile	tct Ser	gac Asp 300	cta Leu	ata Ile	gca Ala	gaa Glu	912
aaa Lys 305	tta Leu	aat Asn	gta Val	ttg Leu	aaa Lys 310	aat Asn	gaa Glu	gaa Glu	tta Leu	aag Lys 315	gaa Glu	aag Lys	att Ile	gat Asp	aca Thr 320	960
gct Ala	aag Lys	caa Gln	tgt Cys	tct Ser 325	aca Thr	gaa Glu	ttt Phe	act Thr	aat Asn 330	aaa Lys	cta Leu	aaa Lys	agt Ser	gaa Glu 335	cat His	1008
gca Ala	gtg Val	ctt Leu	ggt Gly 340	ctg Leu	gac Asp	aat Asn	ctt Leu	act Thr 345	gat Asp	gat Asp	aat Asn	gca Ala	caa Gln 350	aga Arg	gct Ala	1056
											gct Ala				gaa Glu	1104
aag Lys	tta Leu 370	ttt Phe	aaa Lys	gcg Ala	gta Val	gaa Glu 375	aac Asn	tta Leu	tca Ser	aaa Lys	gca Ala 380	gct Ala	caa Gln	gac Asp	aca Thr	1152
						gag Glu				cc						1184

<210> 68

82/108

<211> 394 <212> PRT <213> ospC Chimera <400> 68 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys 25 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro 40 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu 55 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu 70 Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn 90 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser 105 110 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu 120 125 Lys Glu Lys Ile Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp 150 155 Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp 170 Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu 185 Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr 200 Ser Pro Val Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser 215 220 Thr Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile 230 235 Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu 245 250 Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile 260 265 Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn 280 Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu 300 295 Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr 310 315 Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His 325 330 Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala 340 345 Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu 360 Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr 375 Leu Lys Asn Ala Val Lys Glu Leu Thr Ser 390

<210> 69 <211> 1209 <212> DNA <213> ospC Chime:	ra				
<220> <221> CDS <222> (1)(120)	9)				
<400> 69 atg aga tta tta a Met Arg Leu Leu 1 1					
gca caa aaa ggt o Ala Gln Lys Gly 2 20					
gat ggg aat aca Asp Gly Asn Thr 35	tct gca aat Ser Ala Asn	tct gct gat Ser Ala Asp 40	gag tct gtt Glu Ser Val 45	aaa ggg Lys Gly	cct 144 Pro
aat ctt aca gaa Asn Leu Thr Glu 50	ata agt aaa Ile Ser Lys 55	aaa att acg Lys Ile Thr	gat tct aat Asp Ser Asn 60	gcg gtt Ala Val	tta 192 Leu
ctt gct gtg aaa Leu Ala Val Lys 65	gag gtt gaa Glu Val Glu 70	gcg ttg ctg Ala Leu Leu	tca tct ata Ser Ser Ile 75	gat gag Asp Glu	ctt 240 Leu 80
gct aaa gct att Ala Lys Ala Ile	ggt aaa aaa Gly Lys Lys 85	ata aaa aac Ile Lys Asn 90	gat ggt agt Asp Gly Ser	tta gat Leu Asp 95	aat 288 Asn
gaa gca aat cgc Glu Ala Asn Arg 100	aac gag tca Asn Glu Ser	ttg tta gca Leu Leu Ala 105	gga gct tat Gly Ala Tyr	aca ata Thr Ile 110	tca 336 Ser
acc tta ata aca Thr Leu Ile Thr 115	caa aaa tta Gln Lys Leu	agt aaa tta Ser Lys Leu 120	aac gga tca Asn Gly Ser 125	gaa ggt Glu Gly	tta 384 Leu
aag gaa aag att Lys Glu Lys Ile 130	gcc gca gct Ala Ala Ala 135	aag aaa tgc Lys Lys Cys	tct gaa gag Ser Glu Glu 140	ttt agt Phe Ser	act 432 Thr
aaa cta aaa gat Lys Leu Lys Asp 145	aat cat gca Asn His Ala 150	cag ctt ggt Gln Leu Gly	ata cag ggc Ile Gln Gly 155	gtt act Val Thr	gat 480 Asp 160
gaa aat gca aaa Glu Asn Ala Lys	aaa gct att Lys Ala Ile 165	tta aaa gca Leu Lys Ala 170	Asn Ala Ala	ggt aaa Gly Lys 175	gat 528 Asp

					ctt Leu											576
					gag Glu											624
					ggt Gly											672
					gca Ala 230											720
					aat Asn											768
gct Ala	ttg Leu	ctt Leu	tca Ser 260	tct Ser	ata Ile	gat Asp	gaa Glu	ctt Leu 265	tct Ser	aaa Lys	gct Ala	att Ile	ggt Gly 270	aaa Lys	aaa Lys	816
ata Ile	aaa Lys	aat Asn 275	gat Asp	ggt Gly	act Thr	tta Leu	gat Asp 280	aac Asn	gaa Glu	gca Ala	aat Asn	cga Arg 285	aac Asn	gaa Glu	tca Ser	864
ttg Leu	ata Ile 290	gca Ala	gga Gly	gct Ala	tat Tyr	gaa Glu 295	ata Ile	tca Ser	aaa Lys	cta Leu	ata Ile 300	aca Thr	caa Gln	aaa Lys	tta Leu	912
agt Ser 305	gta Val	ttg Leu	aat Asn	tca Ser	gaa Glu 310	gaa Glu	tta Leu	aag Lys	aaa Lys	aaa Lys 315	att Ile	aaa Lys	gag Glu	gct Ala	aag Lys 320	960
gat Asp	tgt Cys	tcc Ser	caa Gln	aaa Lys 325	ttt Phe	act Thr	act Thr	aag Lys	cta Leu 330	aaa Lys	gat Asp	agt Ser	cat His	gca Ala 335	gag Glu	1008
ctt Leu	ggt Gly	ata Ile	caa Gln 340	agc Ser	gtt Val	cag Gln	gat Asp	gat Asp 345	aat Asn	gca Ala	aaa Lys	aaa Lys	gct Ala 350	att Ile	tta Leu	1056
aaa Lys	aca Thr	cat His 355	gga Gly	act Thr	aaa Lys	gac Asp	aag Lys 360	ggt Gly	gct Ala	aaa Lys	gaa Glu	ctt Leu 365	gaa Glu	gag Glu	tta Leu	1104
ttt Phe	aaa Lys 370	tca Ser	cta Leu	gaa Glu	agc Ser	ttg Leu 375	tca Ser	aaa Lys	gca Ala	gcg Ala	caa Gln 380	gca Ala	gca Ala	tta Leu	act Thr	1152
aat Asn 385	tca Ser	gtt Val	aaa Lys	gag Glu	ctt Leu 390	aca Thr	aat Asn	cct Pro	gtt Val	gtg Val 395	gca Ala	gaa Glu	agt Ser	cca Pro	aaa Lys 400	1200
aaa	cct	taa														1209

Lys Pro * <210> 70 <211> 402 <212> PRT <213> ospC Chimera <400> 70 Met Arg Leu Ile Gly Phe Ala Leu Ala Leu Ile Gly Cys 10 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys 20 Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro 40 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu 55 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu 70 75 Ala Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Ser Leu Asp Asn 85 90 Glu Ala Asn Arg Asn Glu Ser Leu Leu Ala Gly Ala Tyr Thr Ile Ser 100 105 110 Thr Leu Ile Thr Gln Lys Leu Ser Lys Leu Asn Gly Ser Glu Gly Leu 120 Lys Glu Lys Ile Ala Ala Ala Lys Lys Cys Ser Glu Glu Phe Ser Thr 135 140 Lys Leu Lys Asp Asn His Ala Gln Leu Gly Ile Gln Gly Val Thr Asp 150 155 Glu Asn Ala Lys Lys Ala Ile Leu Lys Ala Asn Ala Ala Gly Lys Asp 170 Lys Gly Val Glu Glu Leu Glu Lys Leu Ser Gly Ser Leu Glu Ser Leu 180 185 Ser Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr 200 Ser Pro Val Val His Gly Asn Asn Ser Gly Gly Asp Ser Ala Ser Thr 220 215 Asn Pro Asp Glu Ser Ala Lys Gly Pro Asn Leu Thr Val Ile Ser Lys 230 235 Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu 250 245 Ala Leu Leu Ser Ser Ile Asp Glu Leu Ser Lys Ala Ile Gly Lys Lys 260 265 Ile Lys Asn Asp Gly Thr Leu Asp Asn Glu Ala Asn Arg Asn Glu Ser 285 275 280 Leu Ile Ala Gly Ala Tyr Glu Ile Ser Lys Leu Ile Thr Gln Lys Leu 300 295 Ser Val Leu Asn Ser Glu Glu Leu Lys Lys Ile Lys Glu Ala Lys 315 310 Asp Cys Ser Gln Lys Phe Thr Thr Lys Leu Lys Asp Ser His Ala Glu 330 325 Leu Gly Ile Gln Ser Val Gln Asp Asp Asn Ala Lys Lys Ala Ile Leu 345 340 Lys Thr His Gly Thr Lys Asp Lys Gly Ala Lys Glu Leu Glu Glu Leu 360 Phe Lys Ser Leu Glu Ser Leu Ser Lys Ala Ala Gln Ala Ala Leu Thr 375

Asn Ser Val Lys 385 Lys Pro	Glu Leu Thr 390	Asn Pro Va	l Val Ala Glu 395	Ser Pro Lys 400	
<210> 71 <211> 1179 <212> DNA <213> ospC Chime	ra		•		
<220> <221> CDS <222> (1)(117	9)				
<400> 71 atg aga tta tta Met Arg Leu Leu 1			a Leu Ala Leu		48
gca caa aaa ggt Ala Gln Lys Gly 20					96
gat ggg aat gca Asp Gly Asn Ala 35					144
aat ctt aca gaa Asn Leu Thr Glu 50		Lys Ile Th			192
ctg gcc gtg aaa Leu Ala Val Lys 65					240
gct acc aaa gct Ala Thr Lys Ala		Lys Ile Gl			288
aat cag agt aaa Asn Gln Ser Lys 100					336
gac cta ata gca Asp Leu Ile Ala 115		aat gta tt		gaa tta aag	384
gaa aag att gat Glu Lys Ile Asp 130					432
cta aaa agt gaa Leu Lys Ser Glu 145					480
aat gca caa aga Asn Ala Gln Arg			s Ala Asn Lys		528

		aag Lys						576
		tta Leu						624
		aat Asn						672
		gtt Val 230						720
		aac Asn						768
		ata Ile						816
		agt Ser						864
		tat Tyr						912
		tca Ser 310						960
		gaa Glu						1008
		ggc Gly						1056
		gat Asp						1104
		aaa Lys						1152
		gag Glu 390						1179

<210> 72

88/108

<211> 393 <212> PRT <213> ospC Chimera <400> 72 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys 20 Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro 40 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val 55 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu 70 Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala 90 Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser 105 110 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys 120 125 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys 135 140 Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp 150 155 Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly 165 170 Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys 185 Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro 200 Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn 215 220 Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys 235 230 Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu 250 Thr Leu Leu Thr Ser Ile Asp Glu Leu Ala Lys Ala Ile Gly Lys Lys 260 265 Ile Lys Asn Asp Val Ser Leu Asp Asn Glu Ala Asp His Asn Gly Ser 280 Leu Ile Ser Gly Ala Tyr Leu Ile Ser Asn Leu Ile Thr Lys Lys Ile 295 300 Ser Ala Ile Lys Asp Ser Gly Glu Leu Lys Ala Glu Ile Glu Lys Ala 315 310 Lys Lys Cys Ser Glu Glu Phe Thr Ala Lys Leu Lys Gly Glu His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp Asp Asn Ala Lys Lys Ala Ile 345 Leu Lys Thr Asn Asn Asp Lys Thr Lys Gly Ala Asp Glu Leu Glu Lys 360 Leu Phe Glu Ser Val Lys Asn Leu Ser Lys Ala Ala Lys Glu Met Leu 375 Thr Asn Ser Val Lys Glu Leu Thr Ser 390

<210: <211: <212: <213:	> 11 > DN	.78 IA	Chime	era												
<220: <221: <222:	> CI		(117	78)												
<400 atg Met	aga	tta														48
gca Ala																96
gat Asp																144
aat Asn	ctt Leu 50	aca Thr	gaa Glu	ata Ile	agt Ser	aaa Lys 55	aaa Lys	att Ile	aca Thr	gaa Glu	tct Ser 60	aac Asn	gca Ala	gtt Val	gtt Val	192
ctg Leu 65	gcc Ala	gtg Val	aaa Lys	gaa Glu	gtt Val 70	gag Glu	acc Thr	tta Leu	ctt Leu	gca Ala 75	tct Ser	ata Ile	gat Asp	gaa Glu	ctt Leu 80	240
gct Ala	acc Thr	aaa Lys	gct Ala	att Ile 85	ggt Gly	aaa Lys	aaa Lys	ata Ile	ggc Gly 90	aat Asn	aat Asn	ggt Gly	tta Leu	gag Glu 95	gcc Ala	288
aat Asn	cag Gln	agt Ser	aaa Lys 100	aac Asn	aca Thr	tca Ser	ttg Leu	tta Leu 105	tca Ser	gga Gly	gct Ala	tat Tyr	gca Ala 110	ata Ile	tct Ser	336
gac Asp	cta Leu	ata Ile 115	gca Ala	gaa Glu	aaa Lys	tta Leu	aat Asn 120	gta Val	ttg Leu	aaa Lys	aat Asn	gaa Glu 125	gaa Glu	tta Leu	aag Lys	384
gaa Glu	aag Lys 130	att Ile	gat Asp	aca Thr	gct Ala	aag Lys 135	caa Gln	tgt Cys	tct Ser	aca Thr	gaa Glu 140	ttt Phe	act Thr	aat Asn	aaa Lys	432
cta Leu 145	aaa Lys	agt Ser	gaa Glu	cat His	gca Ala 150	gtg Val	ctt Leu	ggt Gly	ctg Leu	gac Asp 155	aat Asn	ctt Leu	act Thr	gat Asp	gat Asp 160	480
aat Asn	gca Ala	caa Gln	aga Arg	gct Ala 165	att Ile	tta Leu	aaa Lys	aaa Lys	cat His 170	gca Ala	aat Asn	aaa Lys	gat Asp	aag Lys 175	ggt Gly	528

					aag Lys											576
					tta Leu											624
					aat Asn											672
					gtt Val 230											720
					aac Asn											768
act Thr	ttg Leu	ctt Leu	gca Ala 260	tct Ser	ata Ile	gat Asp	gaa Glu	ctt Leu 265	gct Ala	act Thr	aaa Lys	gct Ala	att Ile 270	ggt Gly	aaa Lys	816
					ggt Gly											864
aca Thr	ttg Leu 290	tta Leu	gca Ala	ggt Gly	gct Ala	tat Tyr 295	aca Thr	ata Ile	tca Ser	aaa Lys	cta Leu 300	ata Ile	aca Thr	caa Gln	aaa Lys	912
tta Leu 305	gat Asp	gga Gly	ttg Leu	aaa Lys	aat Asn 310	tca Ser	gaa Glu	aaa Lys	tta Leu	aag Lys 315	gaa Glu	aaa Lys	att Ile	gaa Glu	aat Asn 320	960
gct Ala	aag Lys	aaa Lys	tgt Cys	tct Ser 325	gaa Glu	gat Asp	ttt Phe	act Thr	aaa Lys 330	aaa Lys	cta Leu	gaa Glu	gga Gly	gaa Glu 335	cat His	1008
					gaa Glu											1056
att Ile	tta Leu	ata Ile 355	aca Thr	gat Asp	gca Ala	gct Ala	aaa Lys 360	gat Asp	aag Lys	ggc Gly	gct Ala	gca Ala 365	gag Glu	ctt Leu	gaa Glu	1104
aag Lys	cta Leu 370	ttt Phe	aaa Lys	gca Ala	gta Val	gaa Glu 375	aac Asn	ttg Leu	gca Ala	aaa Lys	gca Ala 380	gct Ala	aaa Lys	gag Glu	atg Met	1152
	Ala				aaa Lys 390			ac								1178

<210> 74

91/108

<211> 392 <212> PRT <213> ospC Chimera <400> 74 Met Arg Leu Ile Gly Phe Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro 40 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu 70 Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala 90 Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser 105 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys 120 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys 135 140 Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp 150 155 Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly 165 170 Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys 185 Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro 200 Ile Val His Gly Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn 215 220 Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys 235 230 Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Ile Glu 245 250 Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys 265 260 Lys Ile Gln Gln Asn Gly Gly Leu Ala Val Glu Ala Gly His Asn Gly 280 Thr Leu Leu Ala Gly Ala Tyr Thr Ile Ser Lys Leu Ile Thr Gln Lys 295 300 Leu Asp Gly Leu Lys Asn Ser Glu Lys Leu Lys Glu Lys Ile Glu Asn 315 310 Ala Lys Lys Cys Ser Glu Asp Phe Thr Lys Lys Leu Glu Gly Glu His 330 325 Ala Gln Leu Gly Ile Glu Asn Val Thr Asp Glu Asn Ala Lys Lys Ala 345 340 Ile Leu Ile Thr Asp Ala Ala Lys Asp Lys Gly Ala Ala Glu Leu Glu 360 Lys Leu Phe Lys Ala Val Glu Asn Leu Ala Lys Ala Ala Lys Glu Met 375 Leu Ala Asn Ser Val Lys Glu Leu

<210> 75 <211> 1178 <212> DNA <213> ospC Ch	nimera							
<220> <221> CDS <222> (1)((1178)							
<400> 75 atg aga tta t Met Arg Leu L 1								48
gca caa aaa g Ala Gln Lys G								96
gat ggg aat g Asp Gly Asn A 35	gca tct gca Ala Ser Ala	aat tct Asn Ser 40	gct gat Ala Asp	gag tct Glu Ser	gtt aaa Val Lys 45	ggg Gly	cct Pro	144
aat ctt aca g Asn Leu Thr G 50								192
ctg gcc gtg a Leu Ala Val I 65								240
gct acc aaa g Ala Thr Lys A	gct att ggt Ala Ile Gly 85	aaa aaa Lys Lys	ata ggc Ile Gly 90	aat aat Asn Asn	ggt tta Gly Leu	gag Glu 95	gcc Ala	288
aat cag agt a Asn Gln Ser I 1	aaa aac aca Lys Asn Thr 100	Ser Leu	tta tca Leu Ser 105	gga gct Gly Ala	tat gca Tyr Ala 110	ata Ile	tct Ser	336
gac cta ata c Asp Leu Ile A 115								384
gaa aag att g Glu Lys Ile A 130	gat aca gct Asp Thr Ala	aag caa Lys Gln 135	tgt tct Cys Ser	aca gaa Thr Glu 140	ttt act Phe Thr	aat Asn	aaa Lys	432
cta aaa agt o Leu Lys Ser 0 145								480
aat gca caa a Asn Ala Gln A								528
gct gca gaa c Ala Ala Glu I		Leu Phe						576

					tta Leu											624
					aat Asn											672
					gtt Val 230											720
					aac Asn											768
					ata Ile											816
					ggt Gly											864
ttg Leu	tta Leu 290	tca Ser	gga Gly	gct Ala	tat Tyr	gca Ala 295	ata Ile	tct Ser	gac Asp	cta Leu	ata Ile 300	gca Ala	gaa Glu	aaa Lys	tta Leu	912
aat Asn 305	gta Val	ttg Leu	aaa Lys	aat Asn	gaa Glu 310	gaa Glu	tta Leu	aag Lys	gaa Glu	aag Lys 315	att Ile	gat Asp	aca Thr	gct Ala	aag Lys 320	960
					ttt Phe											1008
ctt Leu	ggt Gly	ctg Leu	gac Asp 340	aat Asn	ctt Ļeu	act Thr	gat Asp	gat Asp 345	aat Asn	gca Ala	caa Gln	aga Arg	gct Ala 350	att Ile	tta Leu	1056
					aaa Lys											1104
ttt Phe	aaa Lys 370	gcg Ala	gta Val	gaa Glu	aac Asn	tta Leu 375	tca Ser	aaa Lys	gca Ala	gct Ala	caa Gln 380	gac Asp	aca Thr	tta Leu	aaa Lys	1152
					ctt Leu 390			cc								1178

<210> 76

94/108

<211> 392 <212> PRT <213> ospC Chimera <400> 76 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys Asp Gly Asn Ala Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Glu Ser Asn Ala Val Val 55 Leu Ala Val Lys Glu Val Glu Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser Leu Leu Ser Gly Ala Tyr Ala Ile Ser 105 Asp Leu Ile Ala Glu Lys Leu Asn Val Leu Lys Asn Glu Glu Leu Lys 120 Glu Lys Ile Asp Thr Ala Lys Gln Cys Ser Thr Glu Phe Thr Asn Lys 135 Leu Lys Ser Glu His Ala Val Leu Gly Leu Asp Asn Leu Thr Asp Asp 150 155 Asn Ala Gln Arg Ala Ile Leu Lys Lys His Ala Asn Lys Asp Lys Gly 170 Ala Ala Glu Leu Glu Lys Leu Phe Lys Ala Val Glu Asn Leu Ser Lys 185 Ala Ala Gln Asp Thr Leu Lys Asn Ala Val Lys Glu Leu Thr Ser Pro 205 200 Ile Val His Gly Asn Asn Ser Arg Lys Asp Gly Asn Ala Ser Thr Asn 215 220 Ser Ala Asp Glu Ser Val Lys Gly Pro Asn Leu Thr Glu Ile Ser Lys 230 235 Lys Ile Thr Glu Ser Asn Ala Val Val Leu Ala Val Lys Glu Val Glu 250 Thr Leu Leu Ala Ser Ile Asp Glu Leu Ala Thr Lys Ala Ile Gly Lys 265 Lys Ile Gly Asn Asn Gly Leu Glu Ala Asn Gln Ser Lys Asn Thr Ser 280 285 Leu Leu Ser Gly Ala Tyr Ala Ile Ser Asp Leu Ile Ala Glu Lys Leu 295 300 Asn Val Leu Lys Asn Glu Glu Leu Lys Glu Lys Ile Asp Thr Ala Lys 315 310 Gln Cys Ser Thr Glu Phe Thr Asn Lys Leu Lys Ser Glu His Ala Val 330 325 Leu Gly Leu Asp Asn Leu Thr Asp Asp Asn Ala Gln Arg Ala Ile Leu 345 340 Lys Lys His Ala Asn Lys Asp Lys Gly Ala Ala Glu Leu Glu Lys Leu 360 365 Phe Lys Ala Val Glu Asn Leu Ser Lys Ala Ala Gln Asp Thr Leu Lys 375 Asn Ala Val Lys Glu Leu Thr Ser 390

<210> 77 <211> 1230 <212> DNA <213> ospC Chi	mera				
<220> <221> CDS <222> (1)(1	230)				
<400> 77 atg aga tta tt Met Arg Leu Le 1				Leu Ile Gl	
gca caa aaa gg Ala Gln Lys Gl 2	t gct gag y Ala Glu 0	tca att gga Ser Ile Gly 25	tcc tgt aat Ser Cys Asn	aat tca go Asn Ser Gl 30	gg aaa 96 .y Lys
gat ggg aat ac Asp Gly Asn Th 35	a tct gca r Ser Ala	aat tct gct Asn Ser Ala 40	gat gag tct Asp Glu Ser	gtt aaa go Val Lys Gi 45	gg cct 144 Ly Pro
aat ctt aca ga Asn Leu Thr Gl 50	a ata agt u Ile Ser	aaa aaa att Lys Lys Ile 55	acg gat tct Thr Asp Ser 60	Asn Ala Va	t tta 192 al Leu
ctt gct gtg aa Leu Ala Val Ly 65	a gag gtt s Glu Val 70	gaa gcg ttg Glu Ala Leu	ctg tca tct Leu Ser Ser 75	ata gat ga Ile Asp G	aa att 240 lu Ile 80
gct gct aaa go Ala Ala Lys Al	t att ggt a Ile Gly 85	aaa aaa ata Lys Lys Ile	cac caa aat His Gln Asn 90	Asn Gly Le	ig gat 288 eu Asp 95
acc gaa tat aa Thr Glu Tyr As	n His Asn	gga tca ttg Gly Ser Leu 105	tta gcg gga Leu Ala Gly	gct tat go Ala Tyr A 110	ca ata 336 la Ile
tca acc cta at Ser Thr Leu II 115					
aag gaa aaa at Lys Glu Lys II 130	t gat gcg e Asp Ala	gct aag aaa Ala Lys Lys 135	tgt tct gaa Cys Ser Glu 140	Thr Phe T	ct aat 432 hr Asn
aaa tta aaa ga Lys Leu Lys G 145	a aaa cac u Lys His 150	aca gat ctt Thr Asp Leu	ggt aaa gaa Gly Lys Glu 155	ggt gtt a Gly Val T	ct gat 480 hr Asp 160
gct gat gca aa Ala Asp Ala L	a gaa gcc s Glu Ala 165	att tta aaa Ile Leu Lys	aca aat ggt Thr Asn Gly 170	Thr Lys T	ct aaa 528 hr Lys 75

						aaa Lys										576
						ctt Leu										624
						cca Pro 215										672
						act Thr										720
						aaa Lys										768
						gag Glu										816
						aaa Lys										864
gaa Glu	gca Ala 290	aat Asn	cga Arg	aac Asn	gaa Glu	tca Ser 295	ttg Leu	ata Ile	gca Ala	gga Gly	gct Ala 300	tat Tyr	gaa Glu	ata Ile	tca Ser	912
aaa Lys 305	cta Leu	ata Ile	aca Thr	caa Gln	aaa Lys 310	tta Leu	agt Ser	gta Val	ttg Leu	aat Asn 315	tca Ser	gaa Glu	gaa Glu	tta Leu	aag Lys 320	960
aaa Lys	aaa Lys	att Ile	aaa Lys	gag Glu 325	gct Ala	aag Lys	gat Asp	tgt Cys	tcc Ser 330	caa Gln	aaa Lys	ttt Phe	act Thr	act Thr 335	aag Lys	1008
						gag Glu										1056
						tta Leu										1104
						tta Leu 375										1152
						act Thr										1200

1230

gtt gtg gca gaa agt cca aaa aaa cct taa Val Val Ala Glu Ser Pro Lys Lys Pro * 405

<210> 78 <211> 409 <212> PRT <213> ospC Chimera

<400> 78 Met Arg Leu Leu Ile Gly Phe Ala Leu Ala Leu Ala Leu Ile Gly Cys

10 Ala Gln Lys Gly Ala Glu Ser Ile Gly Ser Cys Asn Asn Ser Gly Lys Asp Gly Asn Thr Ser Ala Asn Ser Ala Asp Glu Ser Val Lys Gly Pro 40 Asn Leu Thr Glu Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Val Leu 55 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Ile 70 Ala Ala Lys Ala Ile Gly Lys Lys Ile His Gln Asn Asn Gly Leu Asp 90 Thr Glu Tyr Asn His Asn Gly Ser Leu Leu Ala Gly Ala Tyr Ala Ile 100 105 Ser Thr Leu Ile Lys Gln Lys Leu Asp Gly Leu Lys Asn Glu Gly Leu 120 Lys Glu Lys Ile Asp Ala Ala Lys Lys Cys Ser Glu Thr Phe Thr Asn 135 Lys Leu Lys Glu Lys His Thr Asp Leu Gly Lys Glu Gly Val Thr Asp 150 155 Ala Asp Ala Lys Glu Ala Ile Leu Lys Thr Asn Gly Thr Lys Thr Lys 165 170 Gly Ala Glu Glu Leu Gly Lys Leu Phe Glu Ser Val Glu Val Leu Ser 180 185 Lys Ala Ala Lys Glu Met Leu Ala Asn Ser Val Lys Glu Leu Thr Ser 200 Pro Val Val Ala Glu Ser Pro Lys Lys Pro Phe His Gly Asn Asn Ser 220 215 Gly Gly Asp Ser Ala Ser Thr Asn Pro Asp Glu Ser Ala Lys Gly Pro 230 235 Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu 250 245 Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp Glu Leu 265 260 Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu Asp Asn 280 Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu Ile Ser 300 295 Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu Leu Lys 315 310 Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr Thr Lys 325 330 Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln Asp Asp

Asn Ala Lys Ly	s Ala Ile		hr His Gly		Asp Lys	Gly
355 Ala Lys Glu Le	u Glu Glu		ys Ser Leu		Leu Ser	Lys
370 Ala Ala Gln Al		375 Thr Asn S			Thr Asn	
385 Val Val Ala G	390 u Ser Pro 405	Lys Lys P	395 ro			400
<210> 79 <211> 1209 <212> DNA <213> ospC Ch:	mera					
<220> <221> CDS <222> (1)(3	209)					
<400> 79						4.0
atg aga tta tt Met Arg Leu Le 1						Cys
gca caa aaa go Ala Gln Lys G		Ser Ile G				
gat ggg aat ad Asp Gly Asn Tl 35	a tct gca r Ser Ala	aat tct g Asn Ser A 40	ct gat gag la Asp Glu	tct gtt Ser Val 45	aaa ggg Lys Gly	cct 144 Pro
aat ctt aca ga Asn Leu Thr G						
ctt gct gtg ac Leu Ala Val L 65				Ser Ile		
gct gct aaa g Ala Ala Lys A						
acc gaa tat a Thr Glu Tyr A	n His Asn	Gly Ser L	tg tta gcg eu Leu Ala .05	gga gct Gly Ala	tat gca Tyr Ala 110	ata 336 Ile
tca acc cta a Ser Thr Leu I 115						
aag gaa aaa a Lys Glu Lys I 130						
aaa tta aaa g	a aaa cac	aca gat c	tt ggt aaa	ı gaa ggt	gtt act	gat 480

Lys 145	Leu	Lys	Glu	Lys	His 150	Thr	Asp	Leu	Gly	Lys 155	Glu	Gly	Val	Thr	Asp 160	
					gcc Ala											528
					gga Gly											576
					atg Met											624
					agt Ser											672
					aca Thr 230											720
					gaa Glu											768
					aaa Lys											816
					att Ile											864
gat Asp	aat Asn 290	gag Glu	gca Ala	gat Asp	cac His	aac Asn 295	gga Gly	tca Ser	tta Leu	ata Ile	tca Ser 300	gga Gly	gca Ala	tat Tyr	tta Leu	912
					aca Thr 310											960
					att Ile											1008
					ggt Gly											1056
					aaa Lys											1104

											gaa Glu 380					1152
											tca Ser					1200
aca Thr	agc Ser	taa *														1209
<211 <212	0> 80 L> 40 2> PE 3> os)2 RT	Chime	era												
)> 80		_	T 1 -	Q1	D1	71.	T	7.1.	T	71-	T	T 10	C1	Cura	
Met 1	Arg	Leu	Leu	11e 5	сту	Pne	Ala	Leu	A1a 10	Leu	Ala	Leu	тте	15	Cys	
Ala	Gln	Lys	Gly 20	Ala	Glu	Ser	Ile	Gly 25	Ser	Суѕ	Asn	Asn	Ser 30	Gly	Lys	
Asp	Gly	Asn 35		Ser	Ala	Asn	Ser 40		Asp	Glu	Ser	Val 45	Lys	Gly	Pro	
Asn			Glu	Ile	Ser	Lys 55		Ile	Thr	Asp	Ser 60		Ala	Val	Leu	
	50 Ala	Val	Lys	Glu			Ala	Leu	Leu	Ser 75	Ser	Ile	Asp	Glu	Ile 80	
65 Ala	Ala	Lys	Ala		70 Gly	Lys	Lys	Ile			Asn	Asn	Gly	Leu 95		
Thr	Glu	Tyr		85 His	Asn	Gly	Ser		90 Leu	Ala	Gly	Ala			Ile	
Ser	Thr		100 Ile	Lys	Gln	Lys		105 Asp	Gly	Leu	Ļys		110 Glu	Gly	Leu	
Lys		115 Lys	Ile	Asp	Ala		120 Lys	Lys	Cys	Ser	Glu	125 Thr	Phe	Thr	Asn	
Lys	130 Leu	Lys	Glu	Lys	His	135 Thr	Asp	Leu	Gly	Lys	140 Glu	Gly	Val	Thr	Asp	
145					150					155					160	•
	_			165					170		Gly			175		
Gly	Ala	Glu	Glu 180	Leu	Gly	Lys	Leu	Phe 185	Glu	Ser	Val	Glu	Val 190	Leu	Ser	
Lys	Ala	Ala 195	Lys	Glu	Met	Leu	Ala 200		Ser	Val	Lys	Glu 205	Leu	Thr	Ser	
Pro	Val 210		Ala	Glu	Ser	Pro 215		Lys	Pro	Ser	Met 220		Asn	Asn	Ser	
	Lys	Asp	Gly	Asn			Ala	Asn	Ser	Ala 235	Asp	Glu	Ser	Val	Lys 240	
225 Gly		Asn	Leu		230 Glu	Ile	Ser	Lys			Thr	Glu	Ser			
Val	Val	Leu		245 Val	Lys	Glu	Val		250 Thr	Leu	Leu	Thr			Asp	
Glu	Leu		260 Lys	Ala	Ile	Gly		265 Lys	Ile	Lys	Asn	Asp	270 Val		Leu	
Asp	Asn 290	275 Glu	Ala	Asp	His	Asn 295	280 Gly	Ser	Leu	Ile	Ser 300	285 Gly		Tyr	Leu	

Ile 305	Ser	Asn	Leu	Ile	Thr 310	Lys	Lys	Ile	Ser	Ala 315	Ile	Lys	Asp	Ser	Gly 320	
Glu	Leu	Lys	Ala	Glu 325	Ile	Glu	Lys	Ala	Lys 330	Lys	Cys	Ser	Glu	Glu 335	Phe	
Thr	Ala	Lys	Leu 340	Lys	Gly	Glu	His	Thr 345	Asp	Leu	Gly	Lys	Glu 350	Gly	Val	
Thr	Asp	Asp 355	Asn	Ala	Lys	Lys	Ala 360	Ile	Leu	Lys	Thr	Asn 365	Asn	Asp	Lys	
Thr	Lys 370	Gly	Ala	Asp	Glu	Leu 375	Glu	Lys	Leu	Phe	Glu 380	Ser	Val	Lys	Asn	
Leu 385 Thr		Lys	Ala	Ala	Lys 390	Glu	Met	Leu	Thr	Asn 395	Ser	Val	Lys	Glu	Leu 400	
)> 83 L> 12															
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	L> CI	os 1)	. (120	05)												
)> 8:															
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ctt Leu 65	gct Ala	gtg Val	aaa Lys	gag Glu	gtt Val 70	gaa Glu	gcg Ala	ttg Leu	ctg Leu	tca Ser 75	tct Ser	ata Ile	gat Asp	gaa Glu	att Ile 80	240
gct Ala	gct Ala	aaa Lys	gct Ala	att Ile 85	ggt Gly	aaa Lys	aaa Lys	ata Ile	cac His 90	caa Gln	aat Asn	aat Asn	ggt Gly	ttg Leu 95	gat Asp	288
acc Thr	gaa Glu	tat Tyr	aat Asn 100	cac His	aat Asn	gga Gly	tca Ser	ttg Leu 105	tta Leu	gcg Ala	gga Gly	gct Ala	tat Tyr 110	gca Ala	ata Ile	336
			ata	aaa Lys				gat					gaa			384

											gaa Glu 140					432
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cct Pro	gtt Val 210	gtg Val	gca Ala	gaa Glu	agt Ser	cca Pro 215	aaa Lys	aaa Lys	cct Pro	tcc Ser	atg Met 220	gta Val	aat Asn	aat Asn	tca Ser	672
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ggg Gly	cct Pro	aat Asn	ctt Leu	aca Thr 245	gaa Glu	ata Ile	agt Ser	aaa Lys	aaa Lys 250	att Ile	aca Thr	gaa Glu	tct Ser	aac Asn 255	gca Ala	768
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											caa Gln					864
Leu	gct Ala 290	Val	Glu	Ala	ggg Gly	His	Asn	Gly	Thr	Leu	tta Leu 300	Ala	ggt Gly	gct Ala	tat Tyr	912
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gaa Glu	aaa Lys	tta Leu	aag Lys	gaa Glu 325	aaa Lys	att Ile	gaa Glu	aat Asn	gct Ala 330	aag Lys	aaa Lys	tgt Cys	tct Ser	gaa Glu 335	gat Asp	1008
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Asp	Gly	Asn 35		Ser	Ala	Asn	Ser 40		Asp	Glu	Ser	Val 45		Gly	Pro	
Asn	Leu 50		Glu	Ile	Ser	Lys 55	Lys	Ile	Thr	Asp	Ser 60	Asn	Ala	Val	Leu	
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		-	100		Asn	_		105					110			
		115			Gln		120					125				
-	130	_		_	Ala	135					140					
$1\bar{4}5$		-		_	His 150					155					160	
	_		_	165	Ala				170					175		
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-		195	_		Met		200					205				
	210				Ser	215					220					
225					Thr 230					235					240	
				245	Glu				250					255		
Val	Val	Leu	Ala 260	Val	Lys	Glu	Ile	Glu 265	Thr	Leu	Leu	Ala	Ser 270	Ile	Asp	

Glu Leu Ala 275	Thr Lys Ala	Ile Gly 280	Lys Lys	Ile Gln	Gln Asn 285	Gly Gly	,
Leu Ala Val 290	Glu Ala Gl		Gly Thr	Leu Leu 300		Ala Tyr	
Thr Ile Ser 305	Lys Leu Ile 310		Lys Leu	Asp Gly 315	Leu Lys	Asn Ser	
Glu Lys Leu	Lys Glu Lys				Cys Ser	Glu Asp	
Phe Thr Lys	325 Lys Leu Glu 340	_	330 His Ala 345	Gln Leu	Gly Ile 350	335 Glu Asn	L
Val Thr Asp 355	Glu Asn Ala	Lys Lys . 360	Ala Ile	Leu Ile		Ala Ala	I
Lys Asp Lys	Gly Ala Ala		Glu Lys	Leu Phe 380		Val Glu	l
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ctt gct aag Leu Ala Lys							
gct gct tta Ala Ala Leu		n Asn Gly					

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					aaa Lys											528
					gaa Glu											576
ttg Leu	tta Leu	aaa Lys 195	gca Ala	gct Ala	caa Gln	gta Val	gca Ala 200	cta Leu	act Thr	aat Asn	tca Ser	gtt Val 205	aaa Lys	gaa Glu	ctt Leu	624
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aat Asn 225	tca Ser	ggt Gly	ggg Gly	gat Asp	tct Ser 230	gca Ala	tct Ser	act Thr	aat Asn	cct Pro 235	gat Asp	gag Glu	tct Ser	gca Ala	aaa Lys 240	720
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ttt Phe	tta Leu	ctg Leu	gct Ala 260	gtg Val	aaa Lys	gaa Glu	gtt Val	gag Glu 265	gct Ala	ttg Leu	ctt Leu	tca Ser	tct Ser 270	ata Ile	gat Asp	816
gaa Glu	ctt Leu	tct Ser 275	aaa Lys	gct Ala	att Ile	ggt Gly	aaa Lys 280	aaa Lys	ata Ile	aaa Lys	aat Asn	gat Asp 285	ggt Gly	act Thr	tta Leu	864
gat Asp	aac Asn 290	gaa Glu	gca Ala	aat Asn	cga Arg	aac Asn 295	gaa Glu	tca Ser	ttg Leu	ata Ile	gca Ala 300	gga Gly	gct Ala	tat Tyr	gaa Glu	912
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Gly	Gly	Asp 35		Ala	Ser	Thr	Asn 40		Ala	Asp	Glu	Ser 45	Ala	Lys	Gly	
Pro	Asn 50		Thr	Glu	Ile	Ser 55		Lys	Ile	Thr	Asp 60	Ser	Asn	Ala	Phe	
Val 65		Ala	Val	Lys	Glu 70		Glu	Thr	Leu	Val 75	Leu	Ser	Ile	Asp	Glu 80	
	Ala	Lys	Lys	Ala 85		Gly	Gln	Lys	Ile 90		Asn	Asn	Asn	Gly 95	Leu	
Ala	Ala	Leu	Asn 100		Gln	Asn	Gly	Ser 105		Leu	Ala	Gly	Ala 110	Tyr	Ala	
Ile		Thr	Leu	Ile				Leu				Lys 125	Asn	Leu	Glu	
Glu													Glu	Glu	Phe	
Thr 145		Lys	Leu	Lys	Ser 150		His	Ala	Asp	Leu 155	Gly	Lys	Gln	Asp	Ala 160	
	Asp	Asp	His		Lys	Ala	Ala	Ile	Leu 170		Thr	His	Ala	Thr 175	Thr	
Asp	Lys	Gly	Ala 180			Phe	Lys	Asp 185		Phe	Glu	Ser	Val 190	Glu		
Leu	Leu	Lys 195			Gln	Val	Ala 200	Leu	Thr	Asn	Ser	Val 205	Lys		Leu	
Thr	Ser 210		Val	Val	Ala	Glu 215	Ser		Lys	Lys	Pro 220	His	Met	Ala	Asn	
Asn 225		Gly	Gly	Asp	Ser 230	Ala		Thr	Asn	Pro 235	Asp		Ser	Ala	Lys 240	

Gly Pro Asn Leu Thr Val Ile Ser Lys Lys Ile Thr Asp Ser Asn Ala Phe Leu Leu Ala Val Lys Glu Val Glu Ala Leu Leu Ser Ser Ile Asp 265 Glu Leu Ser Lys Ala Ile Gly Lys Lys Ile Lys Asn Asp Gly Thr Leu 280 Asp Asn Glu Ala Asn Arg Asn Glu Ser Leu Ile Ala Gly Ala Tyr Glu 295 300 Ile Ser Lys Leu Ile Thr Gln Lys Leu Ser Val Leu Asn Ser Glu Glu 310 315 Leu Lys Lys Ile Lys Glu Ala Lys Asp Cys Ser Gln Lys Phe Thr 325 330 Thr Lys Leu Lys Asp Ser His Ala Glu Leu Gly Ile Gln Ser Val Gln 345 Asp Asp Asn Ala Lys Lys Ala Ile Leu Lys Thr His Gly Thr Lys Asp 360 365 Lys Gly Ala Lys Glu Leu Glu Glu Leu Phe Lys Ser Leu Glu Ser Leu 375 380 Ser Lys Ala Ala Gln Ala Ala Leu Thr Asn Ser Val Lys Glu Leu Thr 390 395 Asn Pro Val Val Ala Glu Ser Pro Lys Lys Pro 405

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185

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